Chapter NR 261

METAL FINISHING

NR 261.01 Purpose. The purpose of this chapter is to establish standards of performance and effluent limitations for discharges of wastewater from the metal finishing point source category into waters of the state. It is also the purpose of this chapter to establish pretreatment standards and effluent limitations for new and existing sources in the metal finishing point source category which discharge wastewater into publicly owned treatment works.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.02 Applicability. (1) The provisions of this chapter are applicable to dischargers performing any of the operations outlined in s. NR 260.02(1) which include: electroplating of common metals, electroplating of precious metals, anodizing, coatings (chromating, phosphating and coloring), chemical etching and milling, electroless plating and printed circuit board manufacturing. When any of the above operations are present the provisions also apply to discharges from the following process operations:

Abrasive jet machining	Paint stripping
Assembly	Painting
Brazing	Plasma arc machining
Burnishing	Polishing
Calibration	Pressure deformation
Cleaning	Salt bath descaling
Electric discharge machining	Sand blasting
Electrochemical machining	Shearing
Electron beam machining	Sintering
Electropainting	Soldering
Electrostatic painting	Solvent degreasing
Flame spraying	Sputtering
Grinding	Testing
Heat treating	Thermal cutting
Hot dip coating	Thermal infusion
Impact deformation	Tumbling
Laminating	Ultrasonic machining
Laser beam machining	Vacuum metalizing
Machining	Vapor plating
Mechanical plating	Welding

(2) The provisions of this chapter are not applicable to the following:

(a) Operations similar to metal finishing which are specifically regulated by other categorical standards.

Note: These other applicable standards include aluminum forming, battery manufacturing, coil coating, copper forming, electrical and electronic components, iron and steel manufacturing, metal molding and casting (foundries), nonferrous metals forming, nonferrous metals manufacturing, plastic molding and forming, porcelain enameling.

(b) Existing indirect discharging electroplating job shops and independent printed circuit board manufacturers, which are regulated under ch. NR 260.

(c) Metallic platemaking and gravure cylinder preparation conducted for use in the printing and publishing facilities.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.03 Definitions. The following definitions are applicable to terms used in this chapter. Definitions of other terms and meanings of abbreviations are set forth in chs. NR 205, 211, and 260, and the EPA Development Document for Effluent Limitations Guidelines and Standards for the Metal Finishing Point Source Category (EPA 440/1−83/091, June 1983).

Note: Copies of this document are available for inspection at the office of the department of natural resources, 101 S. Webster, Madison; the secretary of state's office, and the office of the legislative reference bureau, and may be obtained for personal use from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20460.

(1) "Cyanide, A" means cyanide amenable to alkaline chlorination as determined by ch. NR 219.

(2) "Independent printed circuit board manufacturer" means a facility which manufactures printed circuit boards principally for sale to other companies.

(3) "Job shop" means a facility which owns not more than 50% (annual area basis) of the materials undergoing metal finishing.

(4) "New source" for indirect dischargers means any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after August 31, 1982; and for direct dischargers means any point source, the construction of which commenced after August 29, 1983.

(5) "NSPS" means new source performance standards.

(6) "PSES" means pretreatment standards for existing sources.

(7) "PSNS" means pretreatment standards for new sources.

(8) "TTO" means total toxic organics, which is the sum of all quantifiable values greater than 0.01 milligrams per liter (10 micrograms per liter) of the toxic organics listed in s. NR 215.03 A through E.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

Subchapter I — Direct Discharges

NR 261.10 Applicability. The provisions of this subchapter are applicable to discharges of wastewater from the metal finishing point source category directly into waters of the state.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.11 Compliance dates. Discharge of pollutants from facilities subject to the provisions of this subchapter may not exceed, as appropriate:

(1) By July 1, 1977 effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT);

(2) By July 1, 1984 effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT);

(3) At the commencement of discharge for new source performance standards (NSPS).

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.12 Discharge standards. (1) BEST PRACTICABLE TECHNOLOGY (BPT). (a) Except as provided in par. (b) and s. NR 261.14, any existing point source subject to this subchapter shall, no later than July 1, 1977, achieve the following effluent limitations attainable by applying the best practicable control technology currently available:

Table 1
BPT Effluent Limitations (mg/l)

Pollutant or pollutant property[1]	1 day max.	monthly avg.
Cadmium (Cd)	0.69	0.26
Chromium (Cr)	2.77	1.71
Copper (Cu)	3.38	2.07
Lead (Pb)	0.69	0.43
Nickel (Ni)	3.98	2.38
Silver (Ag)	0.43	0.24
Zinc (Zn)	2.61	1.48
Cyanide (CN)	1.20	0.65
Total Toxic Organics (TTO)	2.13	−−
Oil & Grease	52	26
Total Suspended Solids (TSS)	60	31
pH	6.0 − 9.5	6.0 − 9.5

1 All metals and cyanide shall be determined in "total" form.

(b) For facilities with cyanide treatment, and upon approval of the department, an amenable cyanide limit (Cyanide, A) of 0.86 milligrams per liter (1 day max.) and 0.32 milligrams per liter (monthly avg.) may apply in place of the total cyanide limit specified in Table 1.

(c) No discharger subject to the provisions of this subsection may augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance with this standard.

(2) BEST AVAILABLE TECHNOLOGY (BAT). (a) Except as provided in par. (b) and s. NR 261.14, any existing point source subject to this subchapter shall, no later than July 1, 1984, achieve the following effluent limitations attainable by applying the best available technology economically achievable:

Table 2
BAT Effluent Limitations (mg/l)

Pollutant or pollutant property[1]	1 day max.	monthly avg.
Cadmium (Cd)	0.69	0.26
Chromium (Cr)	2.77	1.71
Copper (Cu)	3.38	2.07
Lead (Pb)	0.69	0.43
Nickel (Ni)	3.98	2.38
Silver (Ag)	0.43	0.24
Zinc (Zn)	2.61	1.48
Cyanide (CN)	1.20	0.65
Total Toxic Organics (TTO)	2.13	−−−−

[1]All metals and cyanide shall be determined in "total" form.

(b) For facilities with cyanide treatment, and upon approval of the department, an amenable cyanide limit (Cyanide, A) of 0.86 milligrams per liter (1 day max.) and 0.32 milligrams per liter (monthly avg.) may apply in place of the total cyanide limit specified in Table 2.

(c) No discharger subject to the provisions of this subsection may augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance with this standard.

(3) NEW SOURCE PERFORMANCE STANDARDS (NSPS). (a) Except as provided in par. (b) and s. NR 261.14, any new source subject to this subchapter shall, at the commencement of discharge, achieve the following performance standards:

Table 3
NSPS (mg/l)

Pollutant or pollutant property[1]	1 day max.	monthly avg.
Cadmium (Cd)	0.11	0.07
Chromium (Cr)	2.77	1.71
Copper (Cu)	3.38	2.07
Lead (Pb)	0.69	0.43
Nickel (Ni)	3.98	2.38
Silver (Ag)	0.43	0.24
Zinc (Zn)	2.61	1.48
Cyanide (CN)	1.20	0.65
Total Toxic Organics (TTO)	2.13	−−
Oil & Grease	52	26
Total Suspended Solids (TSS)	60	31
pH	6.0 − 9.5	6.0 − 9.5

[1]All metals and cyanide shall be determined in "total" form.

(b) For facilities with cyanide treatment, and upon approval of the department, an amenable cyanide limit (Cyanide, A) of 0.86 milligrams per liter (1 day max.) and 0.32 milligrams per liter (monthly avg.) may apply in place of the total cyanide limit specified in Table 3.

(c) No discharger subject to the provisions of this subsection may augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance with this standard.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.13 Monitoring requirements. (1) TOTAL TOXIC ORGANICS. (a) In place of monitoring for TTO, the department may allow dischargers to make the following certification statement:

> "Based on my inquiry of the person or persons directly responsible for managing compliance with the permit limitation for total toxic organics (TTO), I certify that to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the Department of Natural Resources."

(b) In requesting the certification alternative, a discharger shall submit a toxic organic management plan. The plan shall specify to the satisfaction of the department, the toxic organic compounds used; the method of disposal used instead of dumping, such as reclamation, contract hauling, or incineration; and procedures for ensuring that toxic organics do not routinely spill or leak into the wastewater. The department shall incorporate the plan as a provision of the permit.

(c) If monitoring is necessary to measure compliance with the TTO standard, the industrial discharger need analyze only for those pollutants reasonably expected to be present or those pollutants specified in the discharge permit.

(2) CYANIDE. Self−monitoring for cyanide shall be conducted after cyanide treatment but before dilution with other waste-

streams. Alternatively, samples may be taken of the final effluent if the facility limitations are adjusted based on the dilution ratio of the cyanide wastestream flow to the effluent flow.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.14 Modification of effluent limitations. The effluent limitations and standards set forth in this subchapter shall be used in accordance with this section to establish the quantity or quality of pollutants or pollutant properties which may be discharged by point sources subject to the provisions of this subchapter, except as:

(1) FOR BAT AND NSPS PURPOSES. (a) They may be superseded by more stringent limitations and standards necessary to achieve water quality standards or meet other legal requirements; or

(b) They may be supplemented or superseded by standards or prohibitions for toxic pollutants or by additional limitations for other pollutants required to achieve water quality standards.

(2) FOR BPT PURPOSES. An individual discharger or other interested person may submit evidence to the department that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the effluent limitations. On the basis of such evidence or other available information, the department shall make a written determination that such factors are or are not fundamentally different for that facility compared to those specified in the applicable sections of the EPA Development Document for Effluent Limitations Guidelines and Standards for the Metal Finishing Point Source Category (EPA 440/1−83/091, June 1983). If such fundamentally different factors are found to exist, the department may establish effluent limitations in the WPDES permit either more or less stringent than the limitations in this chapter, to the extent dictated by such fundamentally different factors. Such limitations shall be reviewed by EPA which may approve, disapprove, or specify other limitations.

Note: Copies of the development document identified in sub. (2) are available for inspection at the office of the department of natural resources, 101 S. Webster, Madison; the secretary of state's office, and the office of the legislative reference bureau, and may be obtained for personal use from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20460.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86; correction made under s. 13.93 (2m) (b) 1., Stats., Register, September, 1997, No. 501.

Subchapter II — Indirect Discharges

NR 261.20 Applicability. The provisions of this subchapter are applicable to discharges of wastewater from the metal finishing processes as listed in s. NR 261.02 (1) into publicly owned treatment works.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.21 Compliance dates. Discharge of pollutants from facilities subject to the provisions of this subchapter may not exceed as appropriate:

(1) By February 15, 1986 for pretreatment standards for existing sources (PSES);

(2) At the commencement of discharge for pretreatment standards for new sources (PSNS).

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.22 Discharge standards. (1) PRETREATMENT STANDARDS FOR EXISTING SOURCES (PSES). (a) Except as provided in par. (b), any existing source subject to this subchapter shall comply with ch. NR 211 and achieve, by February 15, 1986, the following pretreatment standards for existing sources:

Table 4
PSES (mg/l)

Pollutant or pollutant property[1]	1 day max.	monthly avg.
Cadmium (Cd)	0.69	0.26
Chromium (Cr)	2.77	1.71
Copper (Cu)	3.38	2.07
Lead (Pb)	0.69	0.43
Nickel (Ni)	3.98	2.38
Silver (Ag)	0.43	0.24
Zinc (Zn)	2.61	1.48
Cyanide (CN)	1.20	0.65
Total Toxic Organics (TTO)	4.57 (by June 30, 1984)[2]	----
	2.13 (by Feb. 15, 1986)	----

[1]All metals and cyanide shall be determined in "total" form.

[2]Metal finishing facilities which are covered by ch. NR 254 shall comply with the 4.57 mg/l TTO limitation by July 10, 1985.

(b) For facilities with cyanide treatment, and upon approval of the control authority, an amenable cyanide limit (Cyanide, A) of 0.86 milligrams per liter (1 day max.) and 0.32 milligrams per liter (monthly avg.) may apply in place of the total cyanide limit specified in Table 4.

(c) No discharger subject to the provisions of this subchapter may augment the use of process wastewater, or otherwise dilute the wastewater, as a partial or total substitute for adequate treatment to achieve compliance with this standard.

(2) PRETREATMENT STANDARDS FOR NEW SOURCES (PSNS). (a) Except as provided in par. (b), any new source subject to this subchapter shall comply with ch. NR 211 and achieve, at the commencement of discharge, the following pretreatment standards for new sources:

Table 5
PSNS (mg/l)

Pollutant or pollutant property[1]	1 day max.	monthly avg.
Cadmium (Cd)	0.11	0.07
Chromium (Cr)	2.77	1.71
Copper (Cu)	3.38	2.07
Lead (Pb)	0.69	0.43
Nickel (Ni)	3.98	2.38
Silver (Ag)	0.43	0.24
Zinc (Zn)	2.61	1.48
Cyanide (CN)	1.20	0.65
Total Toxic Organics (TTO)	2.13	----

[1]All metals and cyanide shall be determined in "total" form.

(b) For facilities with cyanide treatment, and upon approval of the control authority, an amenable cyanide limit (Cyanide, A) of 0.86 milligrams per liter (1 day max.) and 0.32 milligrams per liter (monthly avg.) may apply in place of the total cyanide limit specified in Table 5.

(c) No discharger subject to the provisions of this subchapter may augment the use of process wastewater, or otherwise dilute the wastewater, as a partial or total substitute for adequate treatment to achieve compliance with this standard.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.

NR 261.23 Monitoring requirements. (1) TOTAL TOXIC ORGANICS. (a) In place of monitoring for TTO, the control author-

ity may allow dischargers to make the following certification-statement:

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for total toxic organics (TTO), I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing the last discharge monitoring report. I further certify that this facility is implementing the toxic organic plan submitted to the control authority."

(b) In requesting the certification alternative, a discharger shall submit a toxic organic management plan. The plan shall specify to the satisfaction of the control authority, the toxic organic compounds used; the method of disposal used instead of dumping, such as reclamation, contract hauling, or incineration; and procedures for ensuring that toxic organics do not routinely spill or leak into the wastewater.

(c) If monitoring is necessary to measure compliance with the TTO standard, the industrial discharger need analyze only for those pollutants reasonably expected to be present.

(d) A new or existing source submitting a certification pursuant to pars. (a) to (c) shall implement the toxic organic management plan approved by the control authority.

(2) CYANIDE. Self−monitoring for cyanide shall be conducted after cyanide treatment but before dilution with other wastestreams. Alternatively, samples may be taken of the final effluent if the facility limitations are adjusted based on the dilution ratio of the cyanide wastestream flow to the effluent flow.

History: Cr. Register, October, 1986, No. 370, eff. 11−1−86.